2. the coating layer is dried so that the coating adheres to the amorphous strip;

3. several amorphous strips coated on both their sides or on just one side are superposed;

4. the inorganic cement undergoes a first firing in order to obtain a cuttable amorphous strip/inorganic cement composite;

5. the components are cut from the laminate thus formed; and

6. the cut components are heat treated at a temperature allowing nucleation of nanocrystals in the amorphous strip and vitrification of the polymer/aluminate/silicate/flux mixture.

Depending on the type of polymer/silicate/aluminate/flux mixture used, a temperature greater than 500°C may be suitable.

The polymer is oxidized during the heat treatment.

To form the mixture for coating the amorphous strip, this mixture being in the pasty state, it is possible to use the following substances:

- an ethylcellulose-type resin, which ensures the mechanical integrity of the coating and gives the viscosity suitable for the type of application;

- solvents, for example a mixture of aliphatic or aromatic hydrocarbons which are intended to dissolve the resin and must be easily removed by treatment at low temperature, for example at 100°C;

- a mineral filler, for example glasses or oxides, this being intended to increase the adhesion of the layer to the material in the nanocrystalline state, after its treatment;

- an organic filler, for example consisting of organometallic substances or surfactants, this being intended to improve the dispersion, the wetting and the corrosion resistance of the covering layer.

A typical example of the composition of the pasty coating substance is given below:

. metal filler: 40 to 70 parts by volume;

. resin: 3 to 10 parts by volume;

. mineral filler: 3 to 6 parts by volume;

. organic fillers; 0.5 to 2 parts by volume;

. solvent: the balance of the composition up to 100 parts by volume.

The process according to the invention therefore makes it possible to obtain, in all cases, magnetic components consisting of thin strips of nanocrystalline alloy without any risk of the strip fracturing.

The process according to the invention allows magnetic components made of nanocrystalline alloy to be obtained in complex shapes, something which hitherto had not been possible, the only components made of nanocrystalline alloy that could be obtained being toric cores consisting of a wound strip.

It is also possible to obtain strips made of nanocrystalline alloy which are not brittle by covering one side of a ribbon of nanocrystalline alloy with a coating or a film containing at least one plastic.

Within the context of a treatment according to the invention, these strips may be handled and used in various ways, and for example slit in the form of strips having a width less than the width of the nanocrystalline strip cast in amorphous form and heat treated.

The process according to the invention makes it possible to avoid any risk of the thin strips of nanocrystalline alloy, or possibly amorphous alloy, from fracturing while the magnetic components are being formed, for example by cutting or drilling.

The invention, whose application is particularly beneficial in the case of nanocrystalline alloys may, however, be used in all cases in which it is necessary to handle or form thin brittle metal strips having a thickness of less than 0.1 mm.

Nor is the invention limited to the methods of implementation that have been described above.

Thus, it is possible to cover the thin brittle

metal strip with a coating layer containing a polymer material in a manner different from those which have been described above.

Nor is the invention limited to the nature and to the composition of the layers produced on the thin metal strips during the first phase of the process according to the invention.

Nor is the invention limited to the case in which the strips are cut in a second step of the process, rather it applies to all cases in which thin brittle metal strips are handled or machined when this handling or machining subjects the brittle strips to stresses.

The invention can be applied in fields other than the manufacture of magnetic components.